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1-4 (canceled).

5. (original) A central venous line catheter, said catheter having at least one substantially elongate structure configured for establishing central venous access, said structure having a proximal portion and a distal portion and defining at least a first lumen in communication with the exterior of the elongate structure at said proximal and distal portions, and at least one heat exchange element extending at least along the distal portion adapted to effect heat exchange with the central venous system, characterized in that the catheter is manufactured by flushing the first lumen from its distal portion to its proximal portion with sterile saline.

6. (original) The catheter of claim 5, characterized in that the volume of the flushing sterile saline is at least 5 ccm.

7. (original) The catheter of claim 6, characterized in that a 5 ccm or larger syringe is used for flushing.

8. (original) The catheter of claim 6, characterized in that injection caps are clamped to the proximal portion of the first lumen.

9-21 (canceled).

22. (original) A venous line catheter system, said system having a catheter having at least one substantially elongate structure configured for establishing central venous access, said structure having a proximal portion and a distal portion and defining at least a first lumen in communication with the exterior of the elongate structure at said proximal and distal portions, and at least one heat exchange

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element extending at least along the distal portion adapted to effect heat exchange with the central venous system, characterized by a pump feeding heating/cooling agent at a flow rate in a range of 150 – 450 milliliters per minute through the heat exchange element.

23. (original) The catheter system of claim 22, characterized in that the flow rate is about 240 milliliters per minute.

24. (original) The catheter system of claim 22, characterized in that the temperature of the heating agent is between 38°C and 43°C.

25. (original) The catheter system of claim 22, characterized in that the temperature of the cooling agent is between 1°C and 5°C.

26. (original) The catheter system of claim 22, characterized in that the heat exchanging element is a balloon.

27. (original) The catheter system of claim 26, characterized in that the balloon length is about 55-60 mm.

28. (original) The catheter system of claim 22, characterized in that the heat exchanging element comprises a plurality of balloons.

29. (original) The catheter system of claim 28, characterized in that the balloon length is about 55-60 mm.

30. (original) The catheter system of claim 28, characterized in that three balloons are disposed in a consecutive order, a first balloon having a diameter of approximately 8-12 mm, a second balloon having a diameter of approximately 5-9 mm, and a third balloon having a diameter of approximately 4-6 mm.

31. (original) The catheter system of claim 26, characterized in that the wall thickness of the balloon is between 35  $\mu$ m and 70  $\mu$ m.

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32. (original) The catheter system of claim 22, characterized in that the material from which the balloon is made is selected from the group: urethane, nylon, PE and PET.

33. (original) The catheter system of claim 22, characterized in that the heat conductivity of the balloon is 0.1 to 1.5 Watt per meter x Kelvin.

34. (original) The catheter system of claim 22, characterized in that the heating/cooling agent is a sterile saline.

35-37 (canceled).

38. (new) A method for treating fever comprising:  
establishing a pathway for fluid communication for a treatment substance to flow in a closed loop through a patient's body without entering the bloodstream;  
engaging at least one fever characteristic sensor with the patient;  
receiving signals from the sensor at a controller; and  
using the controller to control at least one of: temperature, and flow, of the treatment substance to establish and maintain normothermia in the patient.

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